September 1, 2017

MEMORANDUM FOR: Distribution Email

FROM: Chris Caruso Magee
                                          Configuration Manager, NCEP Central Operations

SUBJECT: Scheduled Operational Changes and Upgrades for
                                          CPC, OPC, and WPC

Climate Prediction Center

The following accelerated items were implemented this past week:

None

The following will be implemented the week of September 4, 2017:

RFC 938 – Implement the following changes to the Seasonal 13 Lead Interactive
Display:
Changes to Seasonal display processing – 'pdt_master_Seas.sh' - Expand
Production of Temperature and Forecast files from 1 lead to all 13 leads for
improved Seasonal Interactive Display. This includes changes to
'run_outlook_conus.ksh', 'run_outlook_alaska.ksh', and 'update_time.pl' files.

'pdt_master_normals_Seas.sh' - Change normal processing. Climatology files will
be stored as libraries. 'pdt_master_normals.sh' functionality will copy over the
necessary climatology files to the corresponding output directory. Files changed –
'run_normals_conus.ksh' and 'run_normals_alaska.ksh'.

Webside Changes - Changes to the Seasonal Interactive Display webpage
('index.php') for the Seasonal Interactive Display. Functionality is added in order
for users to select which lead (1-13) they wish to view. When the user makes a
selection, the background files and corresponding map will be updated and
displayed on the page.
Was to be implemented on August 14 at 1400Z; rescheduled for August 22 at
1400Z; rescheduled again for August 29 at 1400Z; rescheduled again for
September 7 at 1400Z.

RFC 950 - In preparation for an outage of the CPC production partition /cpc/data
on September 5 at 2015Z to increase partition by 2TB, the following changes are
needed:

- Sep 5 - change cron run time of application $OPGFS/scripts/main_opgfs.sh from 2000Z to 2245Z to keep job from writing when /cpc/data partition is offline.
- Sep 6 - change cron run time of application $OPGFS/scripts/main_opgfs.sh back to 2000Z.
To be implemented on September 5 at 1500Z. This RFC corresponds to NCO RFC 3690 (see below).

The following RFCs are in progress:

None

The following NCO RFCs to be implemented the week of September 4, 2017 may affect CPC:

RFC 3609 - Move NCEP routes from existing routing protocol (OSPF) to BGP (Border Gateway Protocol). This simplifies the entire network as oneNWSnet and Legacy Opsnet are already using BGP.   Then, begin accepting routes via the two connections to Verizon/oneNWSnet in Boulder and College Park. This allows NCO to pass these routes into the CenturyLink and N-WAVE clouds, allowing NCO to provide services to NWS sites on those clouds.
Expected Impact for this change: Route propagation and re-convergence may cause some short lived disturbances (lasting seconds) in the NCEP network. These should be very intermittent throughout the change window. NCO does not expect any "hard down time" in any part of the network during this change. NCO also does not expect any interruption to the College Park or Boulder Data Center networks.   To be implemented on September 5 at 1300Z.

RFC 3654 - IBM will upgrade the version of RHEL and GPFS on the shared storage servers on Tide and Gyre. This is the next step of testing the GPFS 4.1.1-15 upgrade -- it has been tested on Eddy and now IBM will expand to the shared storage before going to the larger cluster. Users will lose access to shared storage for the duration of the work. Was to be implemented beginning 2030Z on August 23 and completed by 0130Z on August 24; postponed to begin on August 30 at 2030Z and be completed by 0130Z on August 31 due to CWD; postponed again due to CWD to begin at 2030Z on September 4 and be completed by 0130Z on September 5.

RFC 3655 – Implement a new mirror to be put on NCOSRV to pull in NUCAPS (NOAA-Unique CrIS ATMS Product System) data from NESDIS's PDA (Product Distribution and Access) system. The data was requested by CPC and it's for Outgoing Longwave Radiation Data. Was to be implemented on August 24 at

1200Z; postponed to August 31 at 1130Z due to CWD; postponed again due to CWD to September 7 at 1400Z.

RFC 3668 – Add one IP range and remove one IP range from the FTP access list for NDACC (Network for the Detection of Atmospheric Composition Change), at CPC's request. Was to be implemented on August 30 at 1415Z; postponed to September 5 at 1415Z due to CWD.

RFC 3687 – g2tmpl v1.0.5 - For the g2tmpl lib, add parameters and new tables 4.2.3.2,4.2.3.3, 4.2.3.4, 4.2.3.5 and 4.2.3.6. Increase allocated memory for table entries from 1000 to 2500. This update needs to be done because WMO released their semiannual update in May and NCEP needs to stay in sync with WMO. To be implemented on September 5 at 1500Z.

RFC 3690 - The /cpc/data volume will be moved from 7-mode (phase 1) storage to CDOT (IDP) storage and then expanded. To be implemented on September 5 at 2015Z.

The following NCO RFCs are in progress and may affect CPC:

None

The following NCO RFCs, which may affect CPC, were postponed:

RFC 2996 – Activate forecast-v3 as forecast.weather.gov. See the SCN at: http://www.nws.noaa.gov/os/notification/scn16-55forecast_govaad.htm for details. Implementation began on April 24 at 1400Z but had to be backed out; new implementation date is TBD.

RFC 3627 – For the College Park NetApp, upgrade the ONTAP OS from v8.2 to v9.1P6. This requires an intermediate upgrade to v8.3.2 then to v9.1P6. Add AFF8080 to cluster. Version 9.1P6 is the NetApp recommended version, and NetApp 8.3 will only have limited supported starting October 2017. This affects all NASCLUSTER01 users. Users may experience degraded services throughout upgrade. Was to be implemented on August 15 at 1200Z; postponed to August 30 at 1200Z; postponed again to a date TBD due to CWD.

Ocean Prediction Center

The following accelerated items were implemented this past week:

RFC 951 – 'mod_res.tbl' v2017.08.28 - Allowed CMC model to display 10m winds in NMAP2. Implemented on August 28 at 1245Z.

RFC 952 – 'mod_res.tbl' v2017.08.29 - Updated HRRR restore files to use MMSL for sea-level pressure; modified the 10M_WINDS to account for very dense data; turned off wind layers (AGL WINDS) that have no data. A forecaster noticed the problem with the slp (PMSL wasn't working for the HRRR in NMAP2) . OPC also improved some wind displays since it was hard to decipher the data depending on the scale that was chosen. Implemented on August 29 at 1345Z.

The following will be implemented the week of September 4, 2017:

RFC 943 - Create web surge guidance graphics with python. Update website data display. This RFC has to be done after an NCO RFC to update python modules on the operational lnx7-opcops* VMs and after OPC's web implementation. examples: https://para.ocean.weather.gov/et_surge/et_surge_info_twlev.shtml https://para.ocean.weather.gov/estofs/estofs_surge_info.shtml https://para.ocean.weather.gov/estofs/estofs_pacific_twlev.shtml Was to be implemented on August 30 at 1530Z; postponed to September 6 at 1530Z due to CWD.

RFC 949 - Activate OPC's new web layout and HTML5 formatting. The current content on the OPC operational website will be moved to an "old" folder and the new content that is currently on the OPC parallel site will be copied into place. A test run has been done successfully on the OPC development website. NCO/IWSB will also need to activate OPC's new URL https://ocean.weather.gov by completing ticket 116823 early in the morning of August 30. The SCN is located at http://www.nws.noaa.gov/os/notification/scn17-74opcwebsiteaaa.htm . Was to be implemented on August 30 at 1000Z; postponed to September 6 at 1000Z due to CWD.

RFC 953 – 'wwv_web_monitor.pl' v2017.09.06 – The script 'wwv_web_monitor.pl' looks for old MP3 files on the OPC website. Update the email notification address to inform OPC's OFB chief if it finds old files. It currently only emails OAB. To be implemented on September 6 at 1230Z.

RFC 954 – 'ascat_top_of_the_hour.pl' v2017.09.06 - Improve logging in script 'ascat_top_of_the_hour.pl' for easier troubleshooting; use a publish directory when sending files to OPC website (sends one time instead of several dozen times). To be implemented on September 6 at 1230Z.

The following RFCs are in progress:

None

The following NCO RFCs to be implemented the week of September 4, 2017 may affect OPC:

RFC 3609 - Move NCEP routes from existing routing protocol (OSPF) to BGP (Border Gateway Protocol). This simplifies the entire network as oneNWSnet and Legacy Opsnet are already using BGP.   Then, begin accepting routes via the two connections to Verizon/oneNWSnet in Boulder and College Park. This allows NCO to pass these routes into the CenturyLink and N-WAVE clouds, allowing NCO to provide services to NWS sites on those clouds. Expected Impact for this change: route propagation and re-convergence may cause some short lived disturbances (lasting seconds) in the NCEP network. These should be very intermittent throughout the change window. NCO does not expect any "hard down time" in any part of the network during this change. NCO also does not expect any interruption to the College Park or Boulder Data Center networks.   To be implemented on September 5 at 1300Z.

RFC 3654 - IBM will upgrade the version of RHEL and GPFS on the shared storage servers on Tide and Gyre. This is the next step of testing the GPFS 4.1.1-15 upgrade -- it has been tested on Eddy and now IBM will expand to the shared storage before going to the larger cluster. Users will lose access to shared storage for the duration of the work. Was to be implemented beginning 2030Z on August 23 and completed by 0130Z on August 24; postponed to begin on August 30 at 2030Z and be completed by 0130Z on August 31 due to CWD; postponed again due to CWD to begin at 2030Z on September 4 and be completed by 0130Z on September 5.

RFC 3666 - Modify the WCOSS parsing table to ensure that duplicate datasets are not being alerted from both the production and non-production supercomputers at the same time. Due to a failure of NAVGEM model data sending to FTPPRD, it was discovered that this and a handful of other datasets were improperly sending from Tide and Gyre at the same time. This can result in clobbering of a file producing push errors. Was to be implemented on August 30 at 1400Z; postponed due to CWD to September 5 at 1700Z.

RFC 3672 - nowCOAST has requested two additional datasets from the CPHC website for use in IDP. This change will be made on the Boulder and College Park NCODFIDP-IN servers. Was to be implemented on August 30 at 1400Z; postponed to September 5 at 1730Z due to CWD.

The following NCO RFCs are in progress and may affect OPC:

None

The following NCO RFCs, which may affect OPC, were postponed:

RFC 2682 – NWSChat goes live in College Park. Was to be implemented December 19 at 1600Z but this was delayed due to ongoing testing. New implementation date was to be February 7 at 1500Z; postponed due to CWD to February 14 at 1500Z. Implementation began February 14 but was then stopped due to issues that arose. New completion date is TBD.

RFC 2996 – Activate forecast-v3 as forecast.weather.gov. See the SCN at: http://www.nws.noaa.gov/os/notification/scn16-55forecast_govaad.htm for details. Implementation began on April 24 at 1400Z but had to be backed out; new implementation date is TBD.

RFC 3627 – For the College Park NetApp, upgrade the ONTAP OS from v8.2 to v9.1P6. This requires an intermediate upgrade to v8.3.2 then to v9.1P6. Add AFF8080 to cluster. Version 9.1P6 is the NetApp recommended version, and NetApp 8.3 will only have limited supported starting October 2017. This affects all NASCLUSTER01 users. Users may experience degraded services throughout upgrade. Was to be implemented on August 15 at 1200Z; postponed to August 30 at 1200Z; postponed again to a date TBD due to CWD.

Weather Prediction Center

The following accelerated items were implemented this past week:

None

The following will be implemented the week of September 4, 2017:

RFC 955 - Scripts that produce several tools for watch collaborator evaluation that currently run on hmtvm will be installed on the Compute Farm for operations. A "count" tool sums up the number of grid points that reached watch criteria over the last 3 forecast cycles, a "flipflop" tool takes the last 3 cycles and assess forecasts

that oscillate back and forth, and a difference tool measures increases and decreases in probabilities from cycle to cycle. The wind probability tool averages hourly NDFD wind data, and commutes a CDF (cumulative distribution function) probability using the bias corrected GEFS 10-meter winds. Output from these tools will be used for WPC-WFO collaboration. To be implemented beginning on September 7 at 1800Z and should be completed by September 21.

The following will be implemented the week of September 11, 2017:

RFC 956 - Push new scripts for winter weather desk probability product generation into the operational scripts area. These scripts will enable the probabilistic products to use the upgraded winter weather ensemble data. To be implemented on September 11 at 1400Z.

The following RFCs are in progress:

None

The following NCO RFCs to be implemented the week of September 4, 2017 may affect WPC:

RFC 3609 - Move NCEP routes from existing routing protocol (OSPF) to BGP (Border Gateway Protocol). This simplifies the entire network as oneNWSnet and Legacy Opsnet are already using BGP.   Then, begin accepting routes via the two connections to Verizon/oneNWSnet in Boulder and College Park. This allows NCO to pass these routes into the CenturyLink and N-WAVE clouds, allowing NCO to provide services to NWS sites on those clouds. Expected Impact for this change: route propagation and re-convergence may cause some short lived disturbances (lasting seconds) in the NCEP network. These should be very intermittent throughout the change window. NCO does not expect any "hard down time" in any part of the network during this change. NCO also does not expect any interruption to the College Park or Boulder Data Center networks.   To be implemented on September 5 at 1300Z.

RFC 3654 - IBM will upgrade the version of RHEL and GPFS on the shared storage servers on Tide and Gyre. This is the next step of testing the GPFS 4.1.1-15 upgrade -- it has been tested on Eddy and now IBM will expand to the shared storage before going to the larger cluster. Users will lose access to shared storage for the duration of the work. Was to be implemented beginning 2030Z on August 23 and completed by 0130Z on August 24; postponed to begin on August

30 at 2030Z and be completed by 0130Z on August 31 due to CWD; postponed again due to CWD to begin at 2030Z on September 4 and be completed by 0130Z on September 5.

RFC 3689 – rap v3.0.13, hrrr v2.0.13 – The hrrr_forecastpre_01 job failed on August 29, 2017 due to excessive cooling of soil temperature. The situation can happen again at any time. A fix that sets a lower limit to prevent soil temperature from cooling too much will be put in for both RAP and HRRR source codes 'update_netcdf_mass.f90'. The more robust code will be part of the rapv4/hrrrv3 update. To be implemented on September 5 at 1515Z.

RFC 3692 - Make adjustments to allow new WPC CF (compute farm) systems to connect to ncosrv and intra:
- Adjust iptables and TCP wrappers on intra and ncosrv to allow access from VLAN of new WPC CF systems.
- The baseline iptables rules have the wrong subnet mask for the VLAN of the new systems, which will be corrected.
- Add DNS reverse lookup zone for the network range of the new systems.
To be implemented on September 7 at 1300Z.

RFC 3697 - The WPC N Drive will be moved from 7-mode (phase 1) storage to CDOT (IDP) storage and then expanded. To be implemented on September 7 at 1800Z.

The following NCO RFCs are in progress and may affect WPC:

None

The following NCO RFCs, which may affect WPC, were postponed:

RFC 2682 – NWSChat goes live in College Park. Was to be implemented December 19 at 1600Z but this was delayed due to ongoing testing. New implementation date was to be February 7 at 1500Z; postponed due to CWD to February 14 at 1500Z. Implementation began February 14 but was then stopped due to issues that arose. New completion date is TBD.

RFC 2996 – Activate forecast-v3 as forecast.weather.gov. See the SCN at: http://www.nws.noaa.gov/os/notification/scn16-55forecast_govaad.htm for details. Implementation began on April 24 at 1400Z but had to be backed out; new implementation date is TBD.

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Please note that security-related RFCs are never listed in the RFC memo.

---- OPERATIONAL ANNOUNCEMENTS ----

The CPC/OPC/WPC Configuration Management documents are available at https://sites.google.com/a/noaa.gov/nws-ncep-nco-cm/.

Please review these documents if you have questions prior to submitting changes for CPC/OPC/WPC configurable items.

 Users who wish to view their network utilization via the Scrutinizer appliance may request access from NCO/IWSB. Please send an account request to the NCWCP Helpdesk at NCWCP.helpdesk@noaa.gov.